



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,971	04/15/2004	Jic Liang	3382-67641-01	1184
26119	7590	09/14/2007		
KLARQUIST SPARKMAN LLP 121 S.W. SALMON STREET SUITE 1600 PORTLAND, OR 97204			EXAMINER WERNER, DAVID N	
			ART UNIT 2621	PAPER NUMBER
			MAIL DATE 09/14/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/826,971

Applicant(s)

LIANG ET AL.

Examiner

David N. Werner

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-67 is/are pending in the application.
- 4a) Of the above claim(s) 34-67 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☒ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-67 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :20040415, 20051020, 20060911, 20070313.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-33, drawn to multiple-layer run-level coding, classified in class 375, subclass 240.23.
 - II. Claims 34-41, drawn to entropy coding that distinguishes between zero levels, insignificant non-zero levels, and significant non-zero levels, classified in class 375, subclass 240.23.
 - III. Claims 42-50, drawn to counting the number of significant values in a sequence, classified in class 375, subclass 240.23.
 - IV. Claims 51-59, drawn to zoned Huffman coding, classified in class 375, subclass 240.23.
 - V. Claims 61-67, drawn to variable block size, classified in class 375, subclass 240.24.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I-V are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at least one subcombination is separately usable. In the instant case, subcombination IV has separate utility such as processing run-length coded sequences. See MPEP § 806.05(d).

The examiner has required restriction between subcombinations usable together. Where applicant elects a subcombination and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction were not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Cory Jones on 6 September 2007, a provisional election was made partially with traverse to prosecute the invention of invention I, claims 1-33. Applicant must make affirmation of this election in replying to this Office action. Claims 34-67 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention. **Applicant has elected invention I without traverse**, but traverses the restriction between inventions II and III, and between inventions IV and V.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-5 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. Claim 1 is directed toward iterative run-level coding. Run-level coding is an algorithm for lossless compression in which a sequence is divided into pairs of "runs" of non-significant values and significant "levels". However, the claim of a "multi-layer representation" of run-level coding, with an **unspecified multiple number** of "layers", or iterations, of repeatedly performing run-level coding by processing layers and runs, is considered inoperative. It is well known in the art that repeatedly performing an iterative or recursive compression algorithm, while expecting increased levels of compression, violates fundamental mathematical principles. See Gailly, comp.compression Frequently Asked Questions, § 9. "Such algorithms are claimed to...be applicable recursively, that is, applying the compressor to the compressed output of the previous run, possibly multiple times" (§ 9.1).

Art Unit: 2621

Dependent claims 6 and 13, and independent claims 22 and 28, which limit the number of layers to two, and all dependent claims therefrom, are considered credible.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Specifically, since the claimed invention is not supported by either a credible asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-33 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. The press release "Microsoft Debuts New Windows Media Player 9

Series", cited in the Information Disclosure Statement of 15 April 2007, shows that Windows Media Video 9 was in public use as of 04 September 2002, more than 1 year prior to the provisional filing date of 07 September 2003. Pages 214-216 of the Decoding Specification for Windows Media Video 9, hereinafter referred to as "WMV9", incorporated in Provisional Application 60/501,081, shows that the claimed invention is part of the WMV9 codec.

Regarding claim 1, section 3.3.5 of WMV9 states that a multiple layer run-level coding method is proposed.

Regarding claims 2, 3, 23, 24, 29, and 30, the Press Release states that the WMV9 standard is compatible with the Windows Media Encoder for content creation (pg. 4), and the Windows Media Player for playback.

Regarding claim 4, run-level coding is performed on "a block of quantized transform coefficients" (§ 3.3.5).

Regarding claim 5, Section 4.1.3 of WMV9 states that there are three possible scan arrays for an 8 x 8 block (pg. 222), and Section 4.7.4 states that there are different zigzag scan arrays for 8 x 8, 8 x 4, 4 x 8, and 4 x 4 transform blocks (pg 310).

Regarding claims 6 and 22, "the value of the SR and the number of ISRs between neighboring SRs are coded" (§ 3.3.5). Regarding claims 7 and 25, the division between Insignificant Runs (ISR) and Significant Runs (SR) is determined by "whether a run value is zero or not" (§ 3.3.5). Regarding claims 8 and 26, value RUNISR "specifies the number of insignificant runs before each significant run" (§ 3.3.5.3.3). Regarding claims 9 and 27, value VALSR "specifies the value of each significant run" (§ 3.3.5.3.2).

Art Unit: 2621

Regarding claims 10, 11, 17, and 18, there are separate VLC tables for VALSL (§ 4.7.2.2.3), RUNISL (§ 4.7.2.2.4.1), VALSR (§ 4.7.2.3.2.1), and RUNISR (§ 4.7.2.3.3.1).

Regarding claim 12, value NUMSR specifies the number of significant runs. However, if it is recognized that there is only one coefficient in the current coded block, this is skipped (§ 3.3.5.3.1).

Regarding claims 13 and 28, “the absolute values of SLs and the number of ISLs between neighboring SLs are coded by a run-level approach” (§ 3.3.5). Regarding claims 14 and 31, level values are those with an absolute value greater than or equal to one (§ 3.3.5). Regarding claim 15, “the value RUNISL specifies the number of insignificant levels (ISL) before each significant level” (§ 3.3.5.2.4). Regarding claim 16, “the absolute value of a significant level is denoted as VALSL” (§ 3.3.5.2.3). Regarding claim 19, the value NUMSL, specifying the number of significant levels, is only present if RUNISL1, the number of ISLS after the last SL, is less than the total number of non-zero coefficients in the current block (§ 3.3.5.2.2).

Regarding claim 20, the same Huffman table is available for different sized blocks, with more codes in the Huffman table available for larger blocks (§ 4.7.2.1.1.3). Regarding claim 21, the Huffman tables are zoned into smaller sub-tables (§4.7.2.1.1.3).

Regarding claim 32, an Insignificant Level (ISL) corresponds to a level whose absolute value is equal to 1, and regarding claim 33, a Significant Level (SL) corresponds to a level whose absolute value is greater than 1 (§ 3.3.5).

Art Unit: 2621

12. An issue of public use or on sale activity has been raised in this application. In order for the examiner to properly consider patentability of the claimed invention under 35 U.S.C. 102(b), additional information regarding this issue is required as follows: the most recent Decoding Specification for Windows Media Video V9 as of 04 September 2002. It will be assumed that revision 87e, incorporated in Provisional Application 60/501,081, is substantially similar.

Applicant is reminded that failure to fully reply to this requirement for information will result in a holding of abandonment.

Conclusion

13. The art made of record and not relied upon is considered pertinent to applicant's disclosure. "A novel VLC based on second-run-level coding and dynamic truncation" (Cui et al.) discloses the present invention (figure 1). However, the present application antedates this reference.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Werner whose telephone number is (571) 272-9662. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri, can be reached on (571) 272-7418. The fax phone

Art Unit: 2621

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DNW

Mehrdad Dastouri
MEHRDAD DASTOURI
SUPERVISORY PATENT EXAMINER
TC 2600